VIDEO INSPECTION PROBES

For Inspection of Fiber Optic Terminations

Includes information regarding Analog Probes, Quick Capture Analog Probes, Parts and Accessories.

User Guide

Part Number: ZP-FBP-0842
March 2003

westover™ SCIENTIFIC

18421 Bothell-Everett Hwy.
Suite 110
Mill Creek, WA 90812
Phone: 800.304.3202 or 425.398.1298
Fax: 425.398.0717
Website: www.westoverscientific.com

Certification Information

F.C.C. Information
Electronic test equipment is exempt from Part 15 compliance (FCC) in the United States.

CE Information

Electronic test equipment is subject to the EMC Directive in the European Union. The EN61326 standard prescribes both emission and immunity requirements for laboratory, measurement, and control equipment. This unit has been tested and found to comply with the limits for a Class A digital device.

Independent Laboratory Testing
This unit has undergone extensive testing according to the European Union Directive and Standards. All pre-qualification tests were performed internally, at WSI, while all final tests were performed externally, at an independent, accredited laboratory. This guarantees the unerring objectivity and authoritative compliance of all test results.

Information provided by WSI is believed to be accurate and reliable. However, no responsibility is assumed by WSI for its use.

WSI's Commerce And Government Entities (CAGE) code under the North Atlantic Treaty Organization (NATO) is 0L8C3.

The information contained in this publication is subject to change without notice.

Words that WSI considers trademarks have been identified as such. However, neither the presence nor absence of such identification affects the legal status of any trademark.

Units of measurement in this document conform to SI standards and practices.

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form, be it electronically, mechanically, or by any other means such as photocopying, recording, or otherwise, without the prior written permission of Westover Scientific Inc. (WSI).

© 2003 Westover Scientific, Inc.

Thank you for purchasing our products. Before assembly and use, make certain that all of the parts you have ordered are present. Check the packaging carefully as some parts are small and can be overlooked. Also, locate any additional parts and accessories you may have purchased. If you are missing any parts, or you are unable to complete the installation of your products, contact Customer Support at (800) 304-3202 or (425) 398-1298.

Safety Conventions

You should understand the following conventions before using the product described in this manual:

WARNING

Refers to a potential *personal* hazard. It requires a procedure which, if not correctly followed, may result in bodily harm or injury. Do not proceed unless you understand and meet the required conditions.

CAUTION

Refers to a potential *product* hazard. It requires a procedure which, if not correctly followed, may result in component damage. Do not proceed unless you understand and meet the required conditions.

IMPORTANT

Refers to any information regarding the operation of the product which you should not overlook.

Table of Contents

Introduction 6
Video Inspection Probe 6
Available Applications 6
Patch Panel Inspection 6
Hardware Devices and Test Equipment Inspection 7
Inspection of Mil-Aero Connectors 7
Inspection of Cable Assemblies 7

Types of Probes 8
Analog Probes 8
Quick Capture Probes 10

Types of Displays 12
Hand-Held LCD Display-(HD1) 12
Video Output Modules (VO1 & VO2) 13

Analog Probe System 14
Analog Probe Assembly and Controls 14
Tip Assembly 15
Standard Tips 15
Patch Cord Tips 15
Long Reach Tips 16
Ribbon-Fiber Tips 16
Angled tips (60 deg.) 16
HD1 Assembly & Controls 19
On/Off Control 20
Auto Shut-down Interval/Contrast Control 21
Rechargeable Battery: 22
Built-in Accessories: 22
AC Power 23
Video Output Module Assembly & Controls 23
Using the Analog Probe & HD1 Display 24

Quick Capture Analog Probe System 25
Quick Capture Probe Overview 25
Software Overview 26
Software Installation 27
Image Capture Procedure 32
Using Toolbars and Menus: 32
Working with the Software: 33
To View a Live Image: 33
To Save an image: 33
To Print an image: 33
To Preview an image before Printing: 33
To Adjust the Contrast & Brightness of a Live Image: 33
To AutoSave an image: 34

Table of Contents

Troubleshooting USB Video Problems 35

Software Error Messages 35

Contacting Technical & Customer Support 40

Warranty 41

Technical Specifications 43

Ordering Information - Parts and Accessories 44

Analog Probes 44

Hand Held Displays 44

Analog Probes Kits 44

Quick Capture Probe Parts & Accessories 47

Quick Capture Probes 47

Quick Capture Probe Kits 48

Probe Tips 49

Standard Bulkhead, Patch Cord, & Universal Tips (PC & APC) 49

Long-Reach Tips 49

Angled Tips 50

Mil-Aero Tips 50

Ribbon Fiber Tips 50

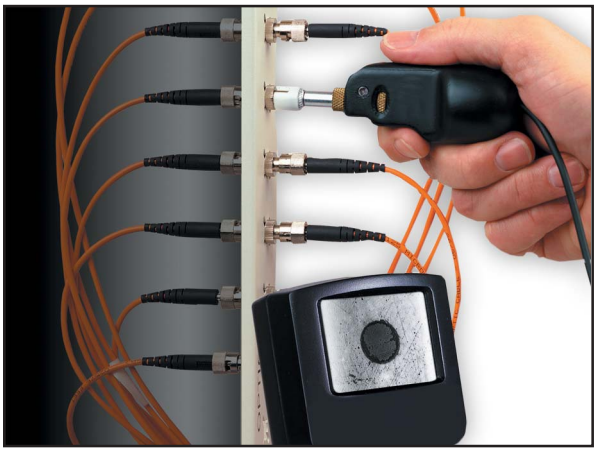
Adapters for Male Connectors (FMA Series) 51

Video Inspection Probe

The Westover Scientific **Video Inspection Probe** is a portable, video microscope used to inspect fiber optic terminations. More specifically, the FBP is used to inspect hard-to-reach connectors that are installed on the "backside" of patch panels or inside hardware devices. It eliminates the need to access the backside of patch panels or disassemble hardware devices prior to inspection.

Available Applications

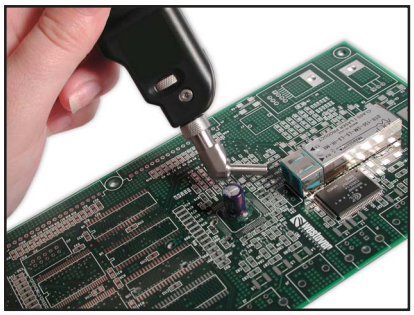
Patch Panel Inspection



Many patch panels are designed to allow the front connector to be easily inspected, but the back one is often difficult to access. Inspecting the connector on the front side of the panel can usually be performed with a simple fiber inspection microscope. However, the back connectors are not as easily inspected with traditional microscopes, thus requiring time-consuming troubleshooting. The FIP system is a fast and effective means of installing, troubleshooting or maintaining fiber optic patch panels.

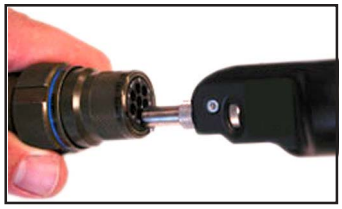
Available Applications (con't)

Hardware Devices and Test Equipment Inspection



Most hardware devices feature connectors, at the faceplate of a box, that lead to back-plane circuitry. These connectors are very difficult to access since they arebuilt inside the device 's enclosure. If a contaminated jumper is inserted, the termination inside the device can become contaminated and contribute to signal loss. Many test equipment designs feature the same type of back plane fiber wherein a critical fiber termination lies just inside a piece of hardware.

Inspection of Mil-Aero Connectors



Most Mil-Aero connectors are based on multiple fiber plugs that embody "Termini" ferrules. Typically, one end of the connector contains multiple "pins" and the other contains multiple "sockets". In either case, you cannot inspect the terminations with a traditional microscope because you're not able to "look" down into the sockets. Using the Video Inspection Probe, you are able to access the fiber endfaces, and inspect these connectors fully assembled.

Inspection of Cable Assemblies

In addition to inspecting back connectors through bulkhead adapters, when Video Inspection Probe is equipped with a Universal Flare Adapter Tip, you can also inspect patch cords, pigtails, and cable assemblies.

Types of Probes

Analog Probes

Westover Scientific manufactures several different configurations to suit different applications and preferences. Here is a breakdown of the differences between them:

Our most common probes utilize an analog CCD, which outputs an NTSC signal. The signal is routed through a 4-pin connector that routes power into the probe, and the video signal out of the probe. These units are suitable for use with either Westover hand held LCD displays, or Westover Video Output Modules (FBP-VO1 and FBP-VO2) where the video signal can then be routed to an external monitor.

The Analog Probe is available as a stand alone product or as part of a kit. Please see Product Information beginning on page xx for a list of the available configurations, including parts and accessories.

The Analog Probe is available in two configurations, Dual Magnification and Single Magnification:

Dual Magnification: This Probe has two magnifications. You may switch between Low and High magnifications using the Magnification Control located slightly behind the Focus Control.

Single Magnification: This Probe has only one magnification setting- Low Magnification. There is no Magnification Control.

	HD1A Display (3.5″/70mm LCD)	**VO1/VO2 & Monitor** (9″/196mm Monitor)
Low Mag.		
Magnification	122x	348x
Horiz. FOV (mm)	0.57	0.57
High Mag.		
Magnification	196x	548x
Horiz. FOV (mm)	0.36	0.36

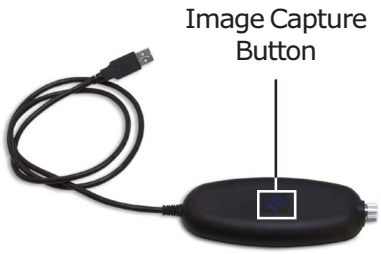
Analog Probes (con't)

Both types of Analog Probes can be purchased with or without the "barrel" assembly. The barrel assembly houses the optics which accommodates our "standard" FBPT tips. The barrel assembly is not needed or can be removed to accommodate our long-reach tips or other specialty tips which include optics inside the tip itself.

The Analog Probes can be used in conjunction with a Westover Digital Capture Module (4-pin Module).

Digital Capture Modules

4-Pin Modules: These modules are small slim-line boxes that accept the input from the standard Westover 4-pin Analog probes, and output to a USB connector. Power is drawn from the PC's USB port and video is fed into the USB port. Westover's Basic imaging software comes with this unit at no extra charge and will allow for live display, capture, save, print, and annotate. For an extra fee, the user can upgrade to FiberChek Advanced to provide image analysis and Go/No-Go testing of fibers.



Digital Capture Module 4-pin
(Part# FBPP-USB3)

To capture the image with this product, the user must either press a small button on the body of the slim-line box, or use the mouse to capture the image in software.

Quick Capture Probes

All Westover Analog Probes can be used in conjunction with our Digital Capture Modules to provide image capture and display functionality on a PC.

Quick Capture Probes feature a 6-pin connector that routes power into the probe, video out of the probe, and a video capture switch out of the probe. When used in conjunction with a 6-pin Digital Capture Module, a small switch on the body of the probe can now be pressed to capture the image displayed on the PC. This is a very valuable function as it allows the user to operate and capture with a single hand. We highly recommend this version for users who plan to capture images frequently.

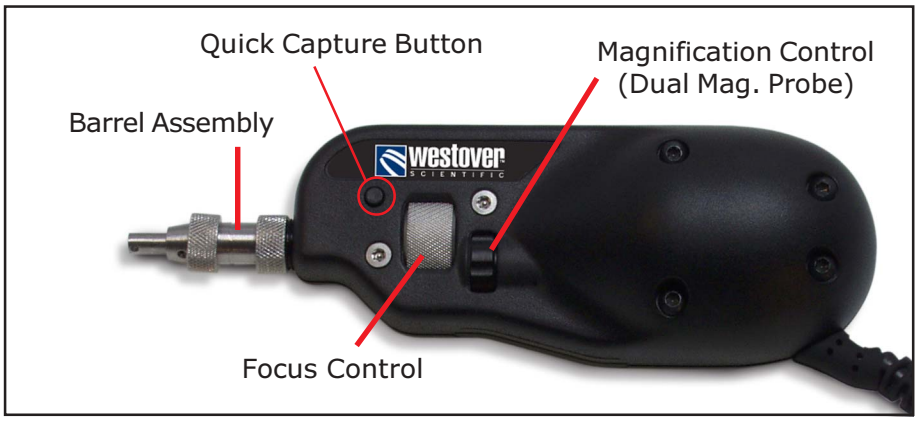
A conversion cable* is available to change the output of the probe from 6-pin to 4-pin. This converter cable makes Quick Capture Probes backwards compatible with all other 4-pin Westover devices (Hand Held LCD Displays, Video Output Modules, etc.).

	PC Monitor 15"/381mm LCD, w/screen resolution set @ 1024 by 768 pixels and Maximized	**PC Monitor** 17"/432mm CRT, w/screen resolution set @ 1024 by 768 pixels and Maximized
Low Mag.		
Magnification	419x	422x
Horiz. FOV (mm)	0.62	0.65
High Mag.		
Magnification	682x	696x
Horiz. FOV (mm)	0.38	0.39

***Conversion Cable**

Part Number	Description
FBPP-DPAC1	Digital Conversion Cable - Interfaces 6-pin, Quick Capture Probe to 4-pin HD1, VO1/VO2.

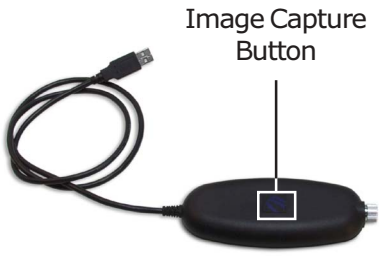
Quick Capture Probes (con't)



Both types of Analog Probes can be purchased with or without the "barrel" assembly. The barrel assembly houses the optics which accommodates our "standard" FBPT tips. The barrel assembly is not needed or can be removed to accommodate our long-reach tips or other specialty tips which include optics inside the tip itself.

Digital Capture Modules

6-pin (Quick Capture Modules): These modules are similar to the 4-pin modules, but feature a 6-pin input connector that mates with a 6-pin Quick Capture Analog Probe. When used together, the user can capture images without having to reach back to the slim-line box or to the mouse for software capture. Converter cables** are available to allow these modules to be used with standard 4-pin probes, although the Quick Capture functionality is not enabled.



Digital Capture Module 6-pin
(Part# FBPP-USB1)

****Conversion Cable**

Part Number	Description
FBPP-DPAC2	Digital Conversion Cable - Interfaces 6-pin, Quick Capture Module to 4-pin Analog Probe.

Hand-Held LCD Display-(HD1)

This lightweight hand-held display includes a bright, high contrast 3.5” TFT active matrix LCD. The HD1A can be powered by 100V-240V AC or by a rechargeable Li-ion battery. Video input is dedicated to NTSC formatted probes. All of the display’s controls are built into the handle for easy access.

Controls and LED Indicators include:

- On/Off Control
- Shut-down Interval/Display Properties Control (Shared Function Control)
- AC power LED
- Battery power LED
- Battery charging status LED/Contrast Brightness Setting (Shared Function LED)

This display uses a 4-pin connector which routes power into the probe, and video out of the probe. A conversion cable (Page xx) is available which will allow this display to be used with a 6-pin Quick Capture Probe.

Video Output Modules (VO1 & VO2)

The VO1 can receive video input from the Analog Probes and another video device (i.e. Westover's Bench Top Video Fiber Microscopes). The video signal is then routed to a video monitor. A selector switch (A/B) allows you to switch between the two devices.

The VO2 can receive video input from 2 Probes and output the signal to a video monitor. A selector switch (A/B) allows you to switch between the Probes. For those users who need to inspect through bulkhead adapters (aka mating sleeves) and pigtails, this device allows you to perform both inspections without having to change tips.

Video Output Module (VO1) with Probe attached

Analog Probe Assembly and Controls

The Analog Probe body is fully assembled. The only assembly ever required is connecting the Probe to a HD1A Display or Video Output Module, and installing a tip on the barrel assembly or a tip which includes optics (see pages xx-xx).

Two functional controls on the Probe include the Focus and Magnification Change Controls.

The Probe is powered by one of the Display devices. After connecting the Probe to a Display device and installing a tip, the tip is inserted into a connector for inspection.

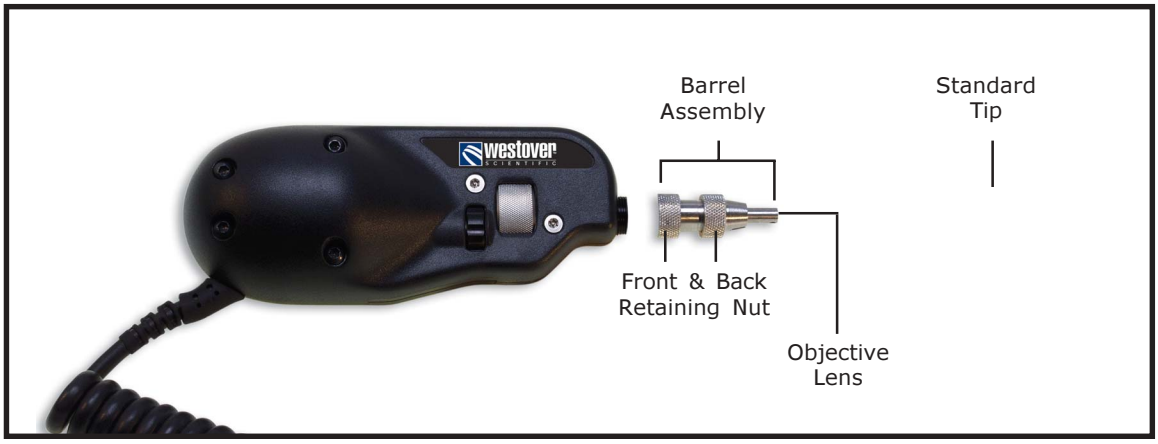
Use the Focus Control to achieve a focused image of the fiber endface. Switch between Hi and Low Magnification with the Magnification Control (Dual Mag. Probes Only).

The image is view on the display device's LCD screen or Monitor.

Tip Assembly

Installing Tips on Westover Probes

All Westover Video Inspection Probes can be purchased with or without the "barrel" assembly. The barrel assembly houses the optics which accommodates our "standard" FBPT tips. The barrel assembly is not needed or can be removed to accommodate our long-reach tips or other tips which include optics in the tip itself.



Standard Tips

There are specific tips for each of the common types of bulkhead adapters. These tips allow you to inspect the fiber surface on the opposite side of the bulkhead (i.e. inside hardware devices or on the back side of patch panels).

FBPT-FC

FBPT-LC

FBPT-ST

Patch Cord Tips

There are also tips for looking at patch cords (i.e. pigtails, male connectors, etc.). Currently, we have two "Universal Patch Cord" tips. One tip is compatible with 2.5mm ferrules (i.e. ST, SC, FC) while the other works well for 1.25mm ferrules (i.e. LC, MU). This allows the Probes to work with either male connector ends, or inspect through female bulkhead adapters.

FBPT-U25
(2.5mm)

FBPT-U12
(1.25mm)

Tip Assembly

Installing Tips on Westover Probes

Long Reach Tips

Using small form factor connectors can produce some tight work spaces. In cases here you may want to inspect a single channel while the adjacent channels are still occupied with connectors or dust plugs, you may need to use a narrow probe with a little longer reach. For this situation, we recommend using our “Long-Reach” tips - designated with - ”L”. They have about 1/2" longer reach and do not have the forward retaining nut. Therefore, they can “reach” between connectors and inspect ports quickly and easily. This also reduces the chances of contaminating adjacent channels during inspection.

FBPT-ST-L

Ribbon-Fiber Tips

Westover has recently developed several configurations of specialty Probe Tips for termination inspection of high-density, multifiber array connectors. These dedicated tips are for use with all Westover Probes and are designed to inspect connectors that are mounted within a bulkhead adapter (in-situ inspection). Each tip mates securely with connectors using a precision, keyed mating adapter interface. The “panning knob” allows the user to view each fiber individually in the linear array. These tips contain several optical components and are made of stainless steel as most of our tips are.

FBPT-MTP

Angled tips (60 deg.)

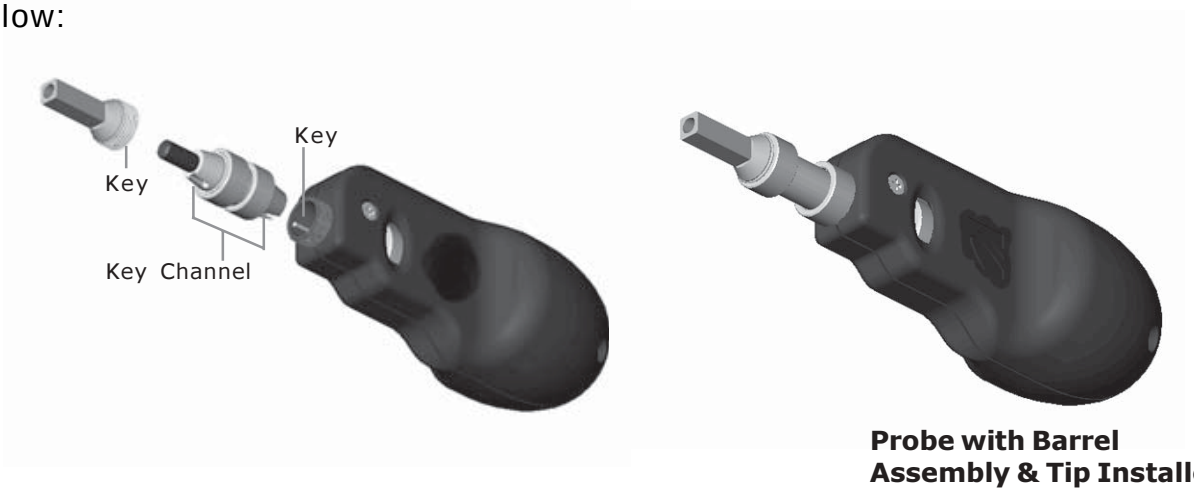
Also newly developed, a series of tips denoted as “A6”. These tips are angled at 60 degrees to allow inspection of transceivers and other hard-to-reach fibers. Regardless of where the transceiver is mounted on a PCB, the Probe and the tip can be maneuvered to fit into the transceiver and provide high quality microscopic inspection.

FBPT-MU-A6

Tip Assembly

Installing Tips on Westover Probes (con't):

The procedure for installation is different depending on which type of tip you're using. See below:



Probe with Barrel Assembly & Tip Installed

Standard - Dedicated Connector Tips

Step 1
Locate tip you want to install and look at the threaded end. You should see a small set screw (not found in the Universal Patch Cord Tips). This screw acts as a "key" and is NOT intended to be adjusted. Do NOT adjust this screw!

Next, locate the "key channels" on the barrel assembly. There are 2 key channels - one for the tip and one for the Probe body.

Finally, locate the key inside the threaded opening on the front of the Probe body.

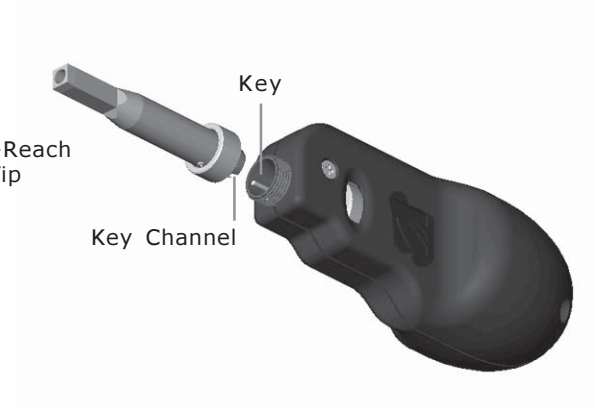
Step 2
To install the tip on the barrel assembly (or the barrel assembly onto the probe itself), you must first align the "keys" to the "key channels". On the standard tips, the small set screw aligns to the key channel on the the barrel assembly. Likewise, if you are attaching the barrel assembly to the probe, you must align the key channel on the barrel assembly to the key on the probe. Once the keys are aligned, screw the retaining nuts onto the threads of the standard tip or probe body until tight. Use caution not to "cross thread" the retaining nut. A good technique is to turn the nut backwards about 1/2 turn before you begin to turn forward. This will prevent cross threading.

Tip Assembly

Installing Tips on Westover Probes (con't):

Long-Reach & other Tips Containing Optics

Long-reach tips and other tips which contain optics DO NOT attach to a barrel assembly. They connect directly to the Probe body. These tips contain a key channel which must mate to the alignment key located in the threaded opening on the front of the probe body. See Steps 1 & 2 of the Standard Dedicated Connector Tip assembly (page xx)

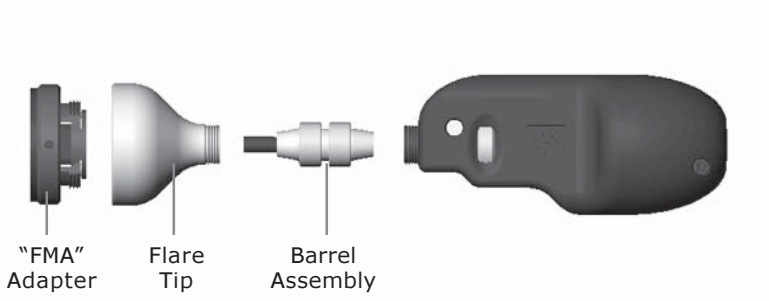


Universal Flare Tip

If you are familiar with Westover's other Fiber Inspection products, you probably have seen our complete line of quality, high-performance adapters (FMA's). If you'd like to use the FBP probe to inspect patch cords (i.e. pigtails or male connector ends), and would like use our "FMA" adapters, then purchase the Universal Flare Adapter (FBPT-UFMA). This standard tip "flares" out to a wider diameter and accepts all Westover FMA adapters.

Step 1
The general assembly instructions for attaching the FBPT-UFMA to the probe are identical to the instructions found on the Standard Dedicated Connector Tip assembly (page xx).

Step 2
Secure the Westover "FMA" adapter into the flare adapter .



Probe with Barrel Assembly & Flare Tip Installed

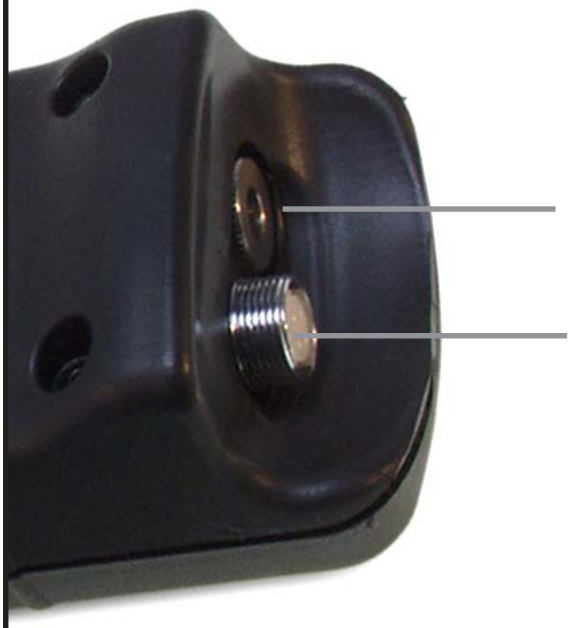
HD1 Assembly & Controls

Using the HD1A Display with the Analog Probes

Connect the Analog Probe to the Display:
The Analog Probe is connected to the HD1A Display to inspect fiber endfaces.

Step 1
Connect the cable from the probe to the HD1A using the 4-pin connector on the bottom of the HD1A handle.

Step 2
Connect the AC power adapter/charger if necessary.



Jack for AC Power adapter/charger

4-pin connector. Accepts 4-pin Analog Probe or Digital Conversion Cable for 6-pin Quick Capture Probe (see page xx)

HD1A Hand-held Display

HD1 Assembly & Controls

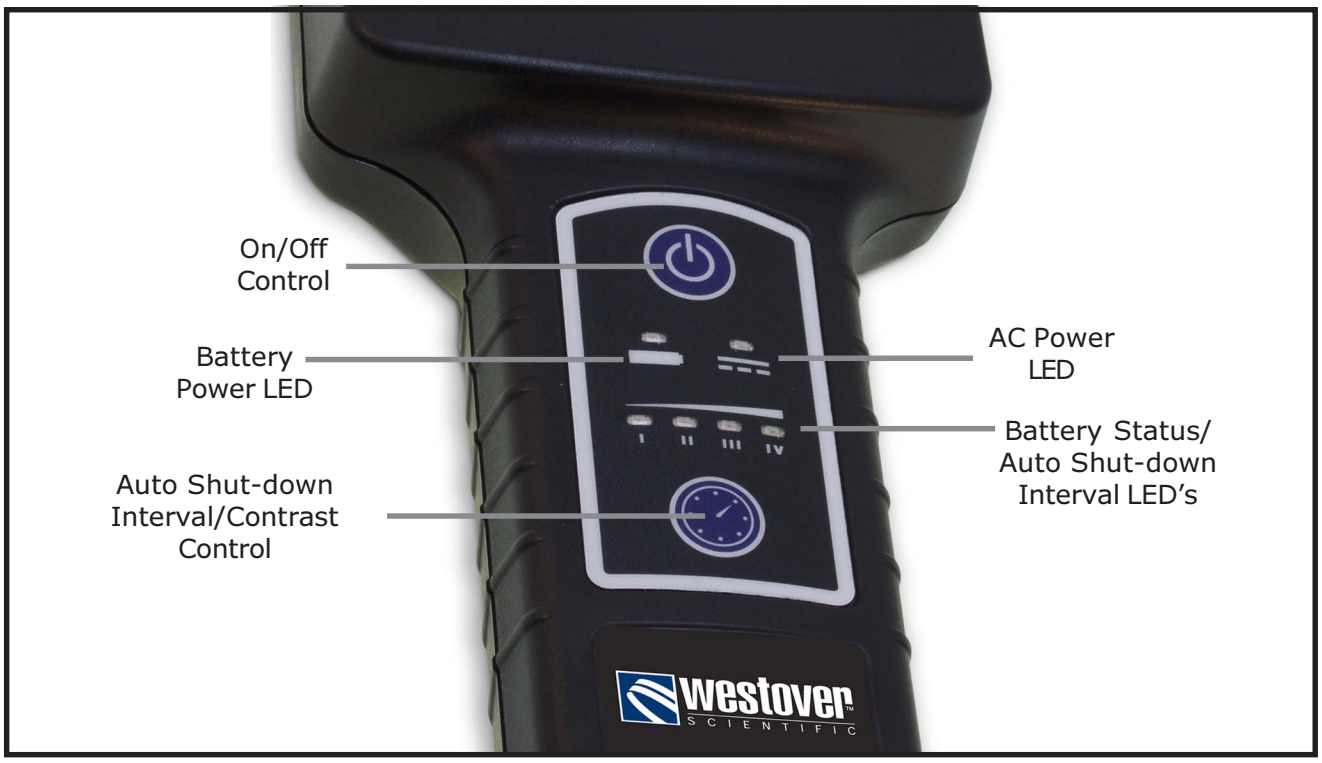
- **On/Off Control**

On/Off Control - (Toggle switch) Press once to turn the unit on, press once again to shut the unit off.

Note the set of 4 LED's under the Battery/AC Power LED's, numbered **I-IV.**

When running on battery power, these LED's will illuminate for the first 5 seconds after powering the unit ON. The number of LED's illuminated, indicates the Battery charge level:

LED#	Battery Power Remaining
I-V	75 -100%
I-III	50 - 75%
I-II	25 - 50%
I	5 - 10%



HD1A Assembly & Controls

- **Auto Shut-down Interval/Contrast Control** (Shared Function Control)

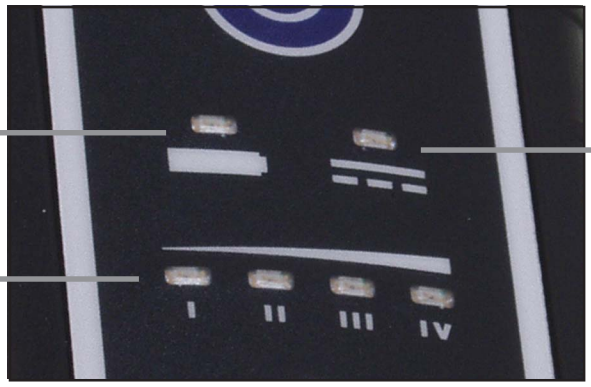
Auto Shut-down Interval
There are 4 different settings which controls the length of time the LCD will remain on after the unit is powered ON. This feature helps save battery power by automatically powering the unit OFF after the time interval selected has been reached. The unit will remain ON at the Infinity setting until all battery power is used or until AC power is disconnected. There is no low battery power warning indicator. To learn the percentage of battery power remaining, power the unit OFF then ON. Note the number or illuminated LED's as previously described.

The time interval can be changed by pressing and holding this Control button down. Note the position of the LED when selecting the time desired.

LED#	Time Interval
I	15 sec.
II	30 sec.
III	60 sec.
IV	Infinity

Contrast Control
There are 4 different preset Contrast settings for the LCD screen. You can change the Contrast setting to accommodate your environmental lighting condition.

Press this Control button while the unit is ON. Each time you press the Control button, the contrast switches to the next setting. Notice the change on the LCD screen each time this button is pressed.



HD1 Assembly & Controls

Rechargeable Battery:

The HD1A uses a Li-ion rechargeable battery (Sony® type NP-550). The battery can be accessed and removed by opening the battery door located on the back of the unit. Slide the battery up in the compartment to remove, vise versa to replace. Replace the compartment door.

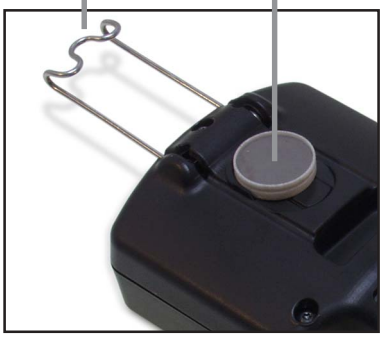
Before you power the Probe with the HD1a battery for the first time, charge the battery with the AC adapter for about **2.5** hours. You can use the Probe while the battery charges. A fully charged battery lasts about **2** hours.

Built-in Accessories:

The HD1A incorporates two built-in positioning accessories which allows for hands-free operation.

- Removeable magnet - allows the HD1A to be attached to ferrous metal surfaces
- Hanging/standing accessory - allows the HD1A to be used in two positions. The metal hook/stand can be folded down into a recessed area for convenient stowage.

Hook & Magnet



HD1 Assembly & Controls

AC Power: Using the AC power adapter has the following advantages:

- Saves internal battery power for portable operation later.
- Charges internal battery pack.
- Allows extended operation.

Part # FBPP-HDB2

Use external power (AC power adapter/charger) to power the HD1A directly from a AC power source, or charge the battery pack. Both can be accomplished simultaneously. Typical battery charging time is approximately 2 hours. Operates between 100VAC -240VAC. Detachable Euro and UK plugs available.

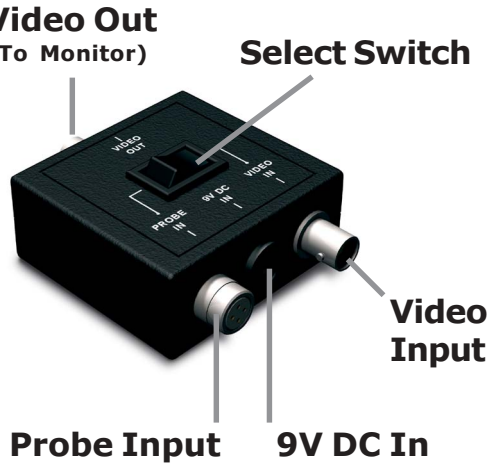
Optional charging stand with AC plug & car adapter available. See Analog Probe Parts and Accessories page xx.

Part # FBPP-BCS1

Video Output Module Assembly & Controls

Make the necessary VO1 or VO2 cable connections (see below). Plug the BNC cable into the VIDEO OUT jack on the VO1 or VO2. Connect the other end to the VIDEO IN jack of the video monitor. Turn the monitor ON. (Select the correct input channel if necessary.) Also, connect the Probe and Power supply to the Module as listed below.

Focus the image on the monitor with the focus control knob located on the probe. Adjust the Contrast and/or the Brightness of the video monitor if necessary.



VIDEO OUTPUT MODULE (VO1) CABLE CONNECTIONS	
PROBE 1 IN	Connects to a FBP Probe
9V DC IN	Connects to the AC Power Supply
VIDEO OUT	Connects to a Video Monitor
SELECT SWITCH	Selects between Probe 1 or Probe 2

VIDEO OUTPUT MODULE (VO2) CABLE CONNECTIONS	
PROBE 1 IN	Connects to a FBP Probe
9V DC IN	Connects to the AC Power Supply
PROBE 2 IN	Connects to a FBP Probe
VIDEO OUT	Connects to a Video Monitor
SELECT SWITCH	Selects between Probe 1 or Probe 2

Using the Analog Probe & HD1 Display

1. Charge the battery in the HD1A Handheld Display. The new Li-ion battery in the display must be fully charged before first use. The display may be used while recharging the battery. (page xx)

2. Connect the AC power adapter to the display unit to recharge the battery and operate the unit.

3. Connect the cable from the Probe to the handheld display. (page xx)

Note: If you are using the Video Output Module (VO1 or VO2) instead of the handheld display, see Video Output Module Cable Connections on page xx.

4. Install one of the Probe Tips on the Probe to match the connector you wish to inspect (i.e., LC, FC, ST, SC). (page xx)

5. Set the Auto-Shutdown Interval (15 seconds, 30 seconds, 60 seconds or Infinity) on the HD1A. (page xx) Push the On/Off Control on the HD1A.

6. Plug the probe into the connector housing.

7. Note the image on the HD1A. Use the Focus Control on the Probe to focus the fiber end-face image if necessary. (page xx)

8. Adjust the Contrast of the HD1A if necessary (page xx).

9. Select between Hi and Low magnification (available on Dual Magnification Probes) using the Magnification Control on the Probe. (page xx)

Probe Assembly and Controls

Probe Overview

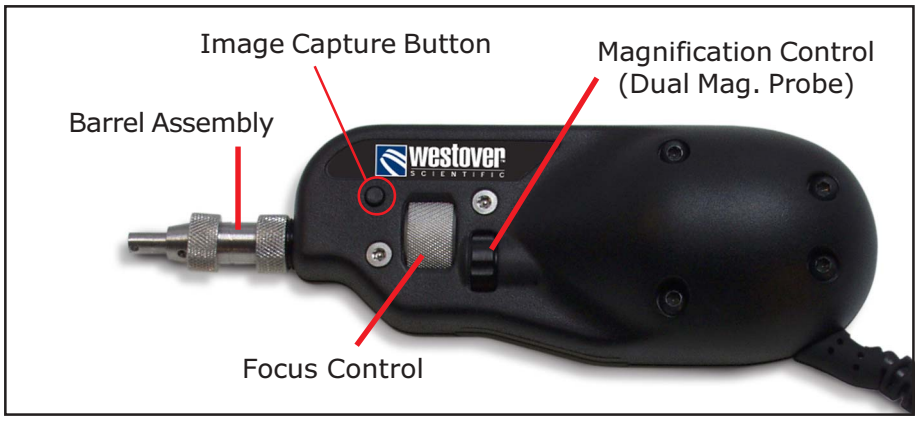
The Analog Quick Capture Probe itself is fully assembled. The only assembly ever required is connecting the Probe to a Qucik Capture Module, connecting the Module to a PC and installing a tip on the barrel assembly or a tip which includes optics (see pages xx-xx).

For video view only, this Probe may be attached to a HD1A Hand-held Display or Video Output Module (VO1/VO2) using a conversion cable (page xx).

Three functional controls on the Probe include Focus, Magnification Change, and the Quick Capture Button.

The Probe is powered by the USB port of a PC. (or by one of the Display devices - see page xx). After connecting the Probe to the Quick Capture Module and the USB port of a PC, attach a Probe Tip and insert the Probe into a connector for inspection. The image is viewed on the PC monitor (or display device's LCD or Monitor). The Quick Capture Probe utilizes software to View, Capture, Save and Print images. See page xx for software installation and use.

Use the Focus Control to achieve a focused image of the fiber endface. Switch between Hi and Low Magnification with the Magnification Control. Capture images using the Quick Capture Button.



Probe Assembly and Controls

Software Overview

FiberChek

FiberChek lets you use your computer to view live images from your Probe on your computer screen. From FiberChek you can also:

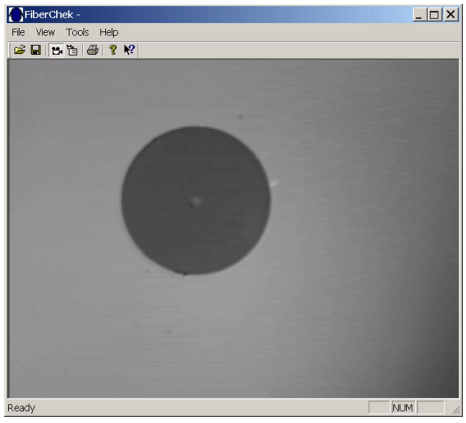
- Freeze video images
- Save images to disk files on your computer
- Recall previously saved images for later review
- Print images

FiberChek's main window can show live, continuously updated images from the probe camera, or it can show a single captured image. In the first case, the main window is in the live video mode. The second case is captured mode. Use the Live Video command to switch between these modes.

You can also press the capture button on the Digital Capture device to switch between modes.

You can save FiberChek images to disk files for later review or to keep a permanent record of your fiber inspections. The Save As command allows you to specify the name of a new or existing file for storing the current image. This command automatically captures an image if FiberChek is in live video mode.

The **AutoSave** feature allows you to specify a sequence of file names and auto save images with the file name each time an image is captured. (i.e : Image0000.png would be the first image saved. The next image captured would automatically be saved as Image0001.png, and so on.)



Probe Assembly and Controls

Software Installation

DO NOT connect the Digital Capture Module to the USB port on your computer at this time.

INSTALL the software first!

Essectial Parts:

- FiberChek CD-ROM
- User's Guide
- Digital Capture Module

System Requirements:

- PC with Pentium ll 266 MHz CPU or higher.
- Operating System: Windows® 98, 2000, ME, or XP
- 30 MB of Hard Drive Space for Application Software
- One available USB port
- 128 MB RAM

To install the software, place the installation disk in your computer's CD-ROM drive. Wait a few seconds for the computer to recognize the new disk.

The setup program should start automatically.

If the setup program does not start automatically:

a) Click on the Start menu button
b) Select Run...
c) In the Run dialog box, type:

D:\setup assuming that D: is your computer's CD-ROM drive. If it is not, substitute the appropriate drive letter.

d) Click 'OK'.

This should start the setup program that installs FiberChek.

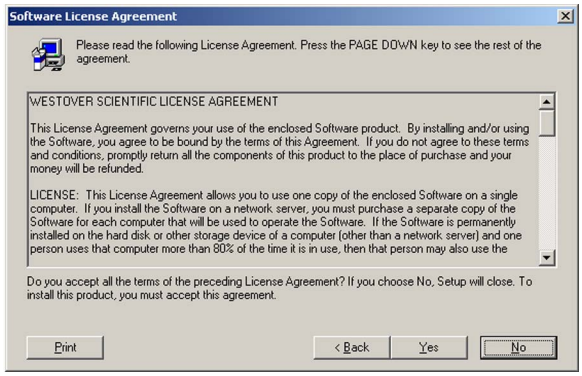
Probe Assembly and Controls

Software Installation (con't)

The Welcome screen will appear prompting you to exit all Windows programs that you have running. Click "Next".

Welcome
Welcome to the Basic FiberChek for USB Setup program. This program will install Basic FiberChek for USB on your computer.
It is strongly recommended that you exit all Windows programs before running this Setup program.
Click Cancel to quit Setup and then close any programs you have running. Click Next to continue with the Setup program.
WARNING: This program is protected by copyright law and international treaties.
Unauthorized reproduction or distribution of this program, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under law.
< Back
Next >
Cancel

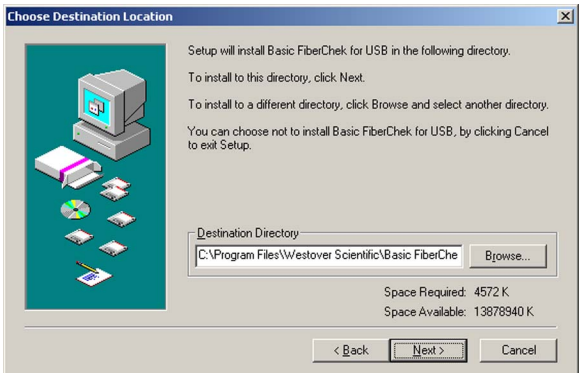
To install FiberChek, you must accept all the terms of the software Licence Agreement. If you do agree, please click "yes" to continue. If you do not agree, please click "No" and the installation will be cancelled.


Software License Agreement
Please read the following License Agreement. Press the PAGE DOWN key to see the rest of the agreement.
WESTOVER SCIENTIFIC LICENSE AGREEMENT
This License Agreement governs your use of the enclosed Software product. By installing and/or using the Software, you agree to be bound by the terms of this Agreement. If you do not agree to these terms and conditions, promptly return all the components of this product to the place of purchase and your money will be refunded.
LICENSE: This License Agreement allows you to use one copy of the enclosed Software on a single computer. If you install the Software on a network server, you must purchase a separate copy of the Software for each computer that will be used to operate the Software. If the Software is permanently installed on the hard disk or other storage device of a computer (other than a network server) and one person uses that computer more than 80% of the time it is in use, then that person may also use the
Do you accept all the terms of the preceding License Agreement? If you choose No, Setup will close. To install this product, you must accept this agreement.
Print
< Back
Yes
No

The "Choose Destination Location" dialog box will appear. Accept the default destination path

C:\Program Files\ Westover Scientific\BasicFiberChek(USB)

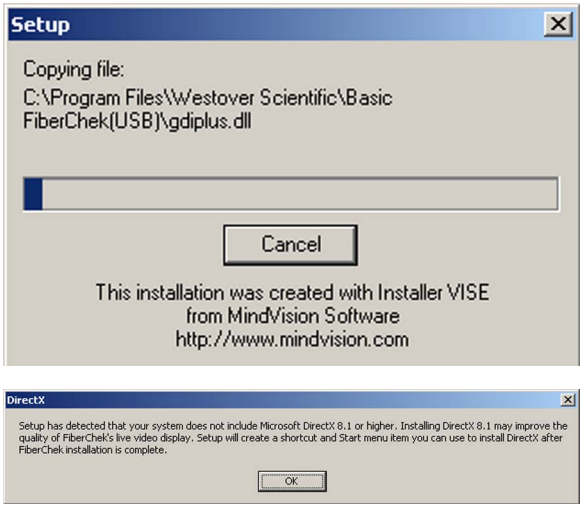
or click "Browse" to select your own path. When you have finished, click "Next".


Choose Destination Location
Setup will install Basic FiberChek for USB in the following directory.
To install to this directory, click Next.
To install to a different directory, click Browse and select another directory.
You can choose not to install Basic FiberChek for USB, by clicking Cancel to exit Setup.
Destination Directory
C:\Program Files\Westover Scientific\Basic FiberChe
Browse...
Space Required: 4572 K
Space Available: 13878940 K
< Back
Next >
Cancel

Probe Assembly and Controls

Software Installation (con't)

Copying of the program files to your computer proceeds.


Setup
Copying file:
C:\Program Files\Westover Scientific\Basic FiberChek(USB)\gdiplus.dll
Cancel
This installation was created with Installer VISE
from MindVision Software
http://www.mindvision.com
DirectX
Setup has detected that your system does not include Microsoft DirectX 8.1 or higher. Installing DirectX 8.1 may improve the quality of FiberChek's live video display. Setup will create a shortcut and Start menu item you can use to install DirectX after FiberChek installation is complete.
OK

FiberChek uses Microsoft DirectX® and DirectShow technology to support real-time video capture over the USB port. The installation program checks to see if the required system files have already been installed on your computer. If the files have not been installed, or if a later version is available, the installation program detects this and alerts you. It then copies a Microsoft installation program to your computer, so you can install the latest version of DirectX® after FiberChek installation has finished.

Microsoft DirectX® 8.1 Drivers:

To install Microsoft DirectX® 8.1:

a) Click on the Start menu button.

b) Select Programs > Westover Scientific > Install DirectX 8.1

Both of these options start the Microsoft DirectX® installation program.

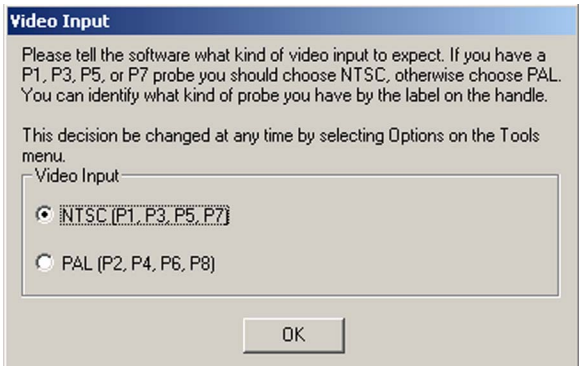
NOTE: FiberChek installation does not copy the DirectX® install program if your computer already has DirectX® 8.1 or later installed.

Probe Assembly and Controls

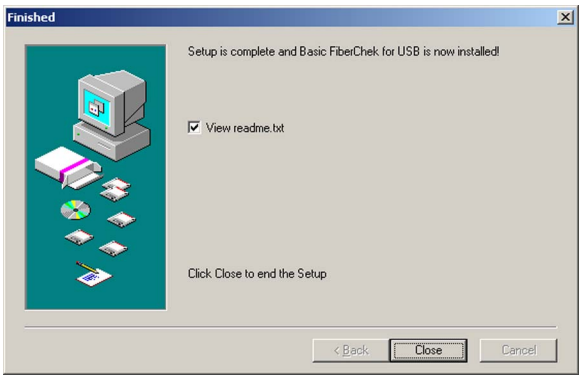
Software Installation (con't)

Video Input

This dialog box allows you to adjust what kind of video signal the USB camera is expecting -NTSC or PAL video input.


Video Input
Please tell the software what kind of video input to expect. If you have a P1, P3, P5, or P7 probe you should choose NTSC, otherwise choose PAL. You can identify what kind of probe you have by the label on the handle.
This decision be changed at any time by selecting Options on the Tools menu.
Video Input
NTSC (P1, P3, P5, P7)
PAL (P2, P4, P6, P8)
OK

When all of the program files have been copied to your computer, click "Close" to end the Setup.



Digital Capture Module Device Drivers

The Digital Capture Module requires device drivers that are not completely installed as part of the FiberChek software installation. Instead, they are installed from the CD when you plug the Digital Capture Module in for the first time.

Your computer's operating system will automatically guide you through the process of installing device drivers the first time you plug theDigital Capture Module into one of the computer's USB ports. You should do this before attempting to run FiberChek for the first time.

Probe Assembly and Controls

Software Installation (con't)

Connecting the Probe to the Digital Capture Module:

Attach the 6-pin connector of the Probe cable securely to the 6-pin plug on the Digital Capture Module.

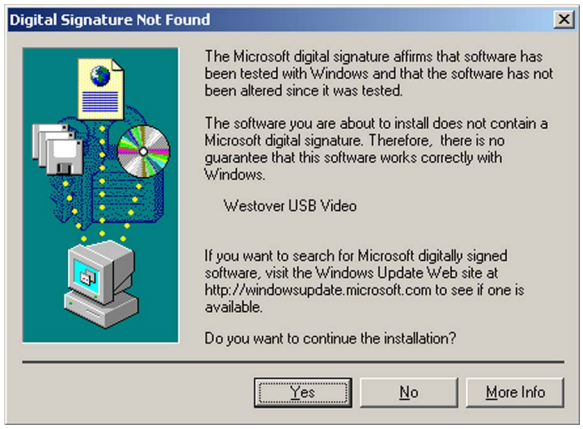
To install USB video capture device drivers:

1. Plug the USB cable of the Digital Capture Module into an open USB port on the computer.

2. The "Found New Hardware Wizard" will appear to guide you through the driver installation process.

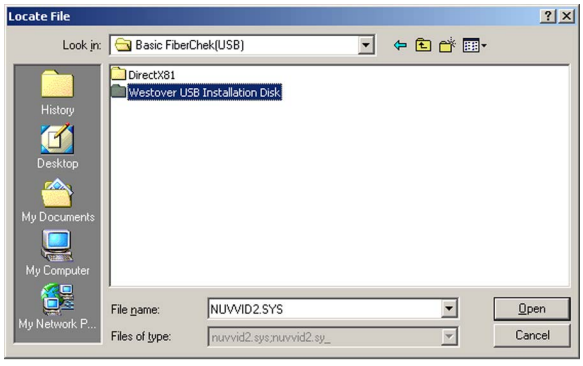
If the Found New Hardware Wizard reports that a digital signature was not found, continue the installation anyway.

Select "Yes".


Digital Signature Not Found
The Microsoft digital signature affirms that software has been tested with Windows and that the software has not been altered since it was tested.
The software you are about to install does not contain a Microsoft digital signature. Therefore, there is no guarantee that this software works correctly with Windows.
Westover USB Video
If you want to search for Microsoft digitally signed software, visit the Windows Update Web site at http://windowsupdate.microsoft.com to see if one is available.
Do you want to continue the installation?
Yes
No
More Info

Note: The USB video capture device drivers are located on the install CD in the "Westover USB Installation Disk" folder.

Choose the NUVID2.SYS file.



For your convenience the drivers are also copied to the Basic Basic FiberChek installation directory:
C:\Program Files\Westover Scientific\Basic FiberChek(USB).

Procedure

Using the Quick Capture Probe & Digital Capture Module for the first time:

1. Install the FiberChecksoftware. (pg. xx)

2. Connect the cable from the Probe to the Digital Capture Module. (pg. xx)

3. Connect the Digital Capture Module to the PC - install Device Drivers. (pg. xx)

4. Install one of the Probe Tips on the Probe to match the connector you wish to inspect (i.e., LC, FC, ST, SC). (pg. xx)

5. Plug the probe into the connector housing.

6. Note the image on the computer screen. Use the Focus Control on the Probe to focus the fiber end-face image if necessary. (pg. xx)

7. Adjust the Brightness and Contrast of the Image Window if necessary. (pg. xx)

8. Select between Hi and Low magnification using the Magnification Control on the Probe. (pg. xx)

9. Capture the live video image on screen by:
- Pressing the Quick Capture Button on the Probe (pg. xx)
- Pressing the Quick Capture Button on the Digital Capture Module (pg. xx)
- Using the mouse from your PC, Press the Capture button on the Main Toolbar. (pg. xx)

Using Toolbars and Menus:

The main toolbar, located just beneath the menu, lets you quickly open images, save images, and capture live images.

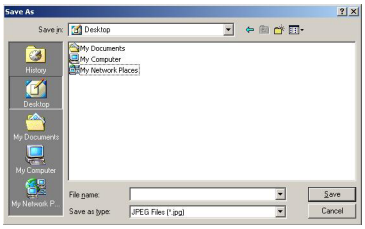
This manual assumes that you are knowledgeable in a Windows® environment. As is standard in Windows® , you will find that most of the dialog boxes or commands can be reached in two ways: A main menu command, a toolbar button, or a shortcut menu command. We usually just point out the menu command and the toolbar in this manual, but if you like shortcut menus please visit the Help menu in FiberChek to learn about shortcuts and other useful information.

Procedure

Working with the Software:

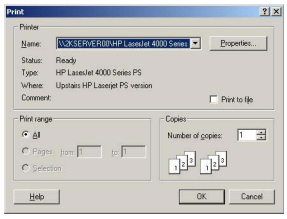
To View a Live Image:

To go back to Live video, select the Live Video command from the View Menu or click on the icon located on the Main Toolbar.



To Save an image:

Select the Save or Save As command from the File menu, or click on the icon located on the Main Toolbar. Save the image with a desired file name. You can also configure the file format to save the captured image ((.bmp or. jpg)

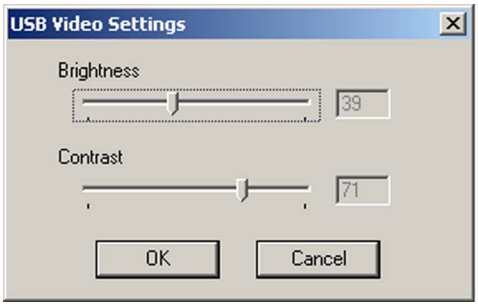


To Print an image:

Select the Print command from the File menu, or click on the icon located on the Main Toolbar. The Print box displays the name of the printer currently selected.

To Preview an image before Printing:

Select the Print Preview command from the File menu. Select from the otions available.



To Adjust the Contrast & Brightness of a Live Image:

Select the Adjust Camera command from the View Menu or click on the icon located on the Main Toolbar.

Procedure

Working with the Software

To AutoSave an image:

The AutoSave dialog appears after you select the Tools/Options Menu. It gives you a chance to tell FiberChek what auto save features you would like enabled.

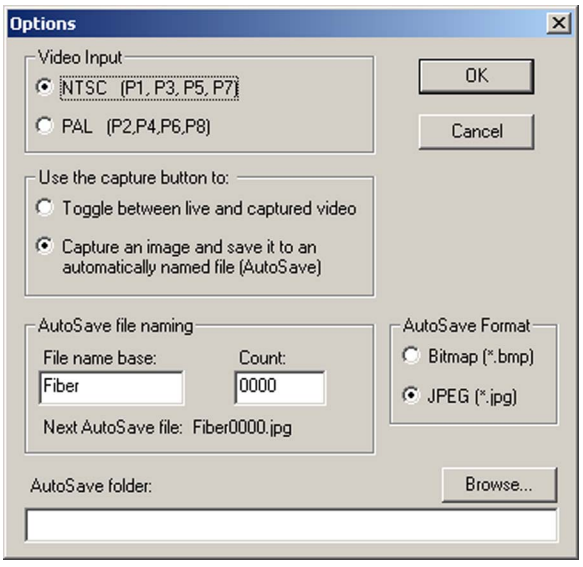
The **After capturing an image** group box allows you to choose when you would like to auto save a file.

Radio button:	***Select this option to:***
Toggle bewteen live and captured video	Disable the auto save feature.
Capture an image and save it to an automatically named file (Auto Save)	Enable auto save for every time an image is captured.

The **AutoSave Format** group box allows you to choose what file type you would like the auto saved image to be saved as: (.bmp or .jpg).

The **AutoSave file naming** group box allows you to choose the base file name and auto save starting index. (i.e : Image0000.png would be the first image saved. The next image captured would automatically be saved as Image0001.png, and so on.)

The **AutoSave folder** group box allows you to choose the directory in which you wish to auto save.



Troubleshooting USB Video Problems

Software Error Messages

Driver Not Installed

If you get the error message **"Unable to access the Westover USB Video Capture device: the driver appears not to be installed."** when starting FiberChek, it generally means that the USB image capture device has not yet been plugged in.

Have you plugged in the USB image capture device and installed the driver?

When you plug the device in for the first time, the Windows "Found New Hardware" prompt will appear to guide you through the specific installation steps.

Note: The Westover USB Video device does not have a digital signature associated with it, therefore if asked, you should continue the installation anyway.

Driver Partially Installed

If you get the error message **"Unable to access the Westover USB Video Capture device: the driver appears to be only partially installed."** when starting FiberChek, it generally means that the USB image capture device has not been completely installed.

Have you completely installed the USB image capture device driver?

Try the following steps to complete a partial driver installation:

1. Plug in the USB image capture device.
2. Click on the Start button, choose Settings, and select Control Panel.
3. From the Control Panel choose the Add/Remove Hardware icon.
4. Follow all the defaults until you get to the list of hardware devices that Windows is aware of. Select the "USB Video Capture" entry and click Next. Continue to follow the steps outlined by Windows.

Note: The USB video capture device drivers are located on the install CD in the "Westover USB Installation Disk" folder. For your convenience they are also copied to the FiberChek installation directory (usually C:\Program Files\Westover Scientific\BasicFiberChek(USB)).

Note: The Westover USB Video device does not have a digital signature associated

Troubleshooting USB Video Problems

Error Messages

Missing Driver

If you get the error message "Unable to access the Westover USB Video Capture device: the driver appears to be missing." when starting FiberChek, it generally means that that the USB image capture device driver has been uninstalled from Windows.

Is the the USB image capture device driver installed?

Try the following steps to re-install the driver:

1. Plug in the USB image capture device. If the Found New Hardware wizard appears, follow its instructions to complete the installation. Should the wizard not appear, proceed to step 2.
2. Click on the Start button, choose Settings, and select Control Panel.
3. From the Control Panel choose the Add/Remove Hardware icon.
4. Follow all the defaults until you get to the list of hardware devices that Windows is aware of. Select the "USB Video Capture" entry and click Next. Continue to follow the steps outlined by Windows.

Note: The USB video capture device drivers are located on the install CD in the "Westover USB Installation Disk" folder. For your convenience they are also copied to the FiberChek installation directory (usually C:\Program Files\Westover Scientific\BasicFiberChek(USB)).

Note: The Westover USB Video device does not have a digital signature associated with it, therefore if asked, you should continue the installation anyway.

If this did not solve the problem, contact for more assistance.

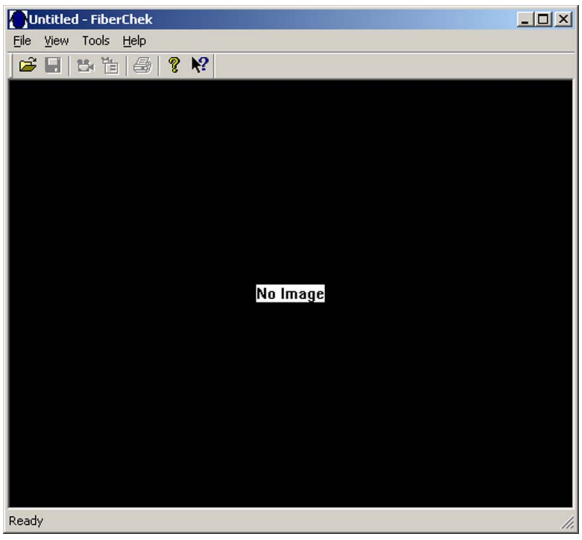
Troubleshooting USB Video Problems

You may be able to quickly diagnose your problem depending on what you see in the FiberChek Image window.

What do you see in the Basic Micron main window?

I see a blank, black screen with the words **"No Image"**.
I see a blank, black screen.
None of the above

Blank Black Screen With "No Image"



A black screen with the words "No Image" indicates that FiberChek is unable to detect or communicate with the Digital Capture Module.

Are you running another program that uses the USB capture device?

Only one program at a time can use the capture device. You will not be able to view live video images if you open FiberChek while another program that uses the capture device is already running. However, you will be able to load and review previously saved image files. To fix this problem, close the programs that are using the capture device and restart FiberChek.

Have you installed the USB capture device drivers?

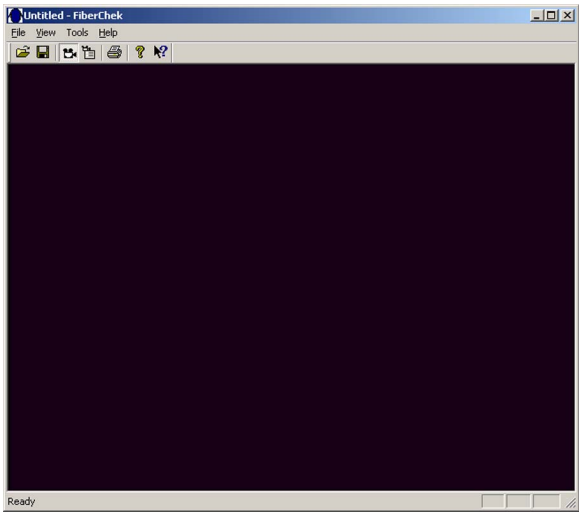
No: Exit BasicMicron and install device drivers.

Is the Digital Capture Module connected to a USB port?

No: Exit BasicMicron and connect the device to a USB port.

Troubleshooting USB Video Problems

Blank Black Screen



A black screen indicates that the USB video capture device is functioning, but there is a problem with the camera or the illumination.

Is the microscope connected to the USB capture device?

No: Connect the microscope and restart FiberChek.

Is the Probe LED turned on?

No. Remove any connector from the Probe tip and look down the barrel. You should be able to see light from the LED illuminator. If there is no light, there might be a hardware problem with the Probe or a power issue with the USB port of your PC. Contact Technical Support for more assistance.

If the microscope illumination is on, but you still get an all black screen, you should verify that you have the most recent version of the video card driver. These drivers are commonly available for download on the computer manufacturer's web-site.

Did the computer just come out of standby or hibernation?

The VGA drivers of certain computers are known to have problems with coming out of suspend power mode. Please upgrade your video driver to the latest version supplied by your manufacturer.

If this did not solve the problem, contact Technical Support for more assistance.

Contacting Technical & Customer Support

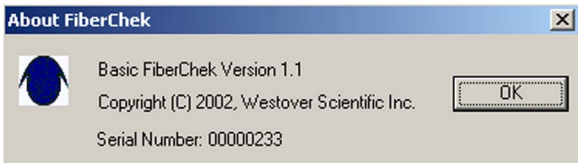
General Information

For technical & customer support, contact Westover Scientific. Please be sure to have the following information available:

- Name and Serial Number (if applicable) of the Product(s) as well as a description of your problem close at hand.

For Software Problems:

- The type of computer you are using.
- The operating system you are using.
- The FiberChek software version. (You can find this displayed in the About FiberChek dialog box in the Main Menu under Help.)



To obtain Technical support for these products, contact Westover Scientific from at one of the following numbers. Technical and Customer Support is available to take your calls from Monday to Friday, 8:00 am to 5:00 pm (Pacific Time in North America).

Westover Scientific, Inc.
18421 Bothell-Everett Hwy., Suite 110
Mill Creek, WA 98012

Phone: 1-425-398-1298 or 800-304-3202
Fax: 1-425-398-0717
Email: info @westoverscientific.com
Web: www.westoverscientific.com

Warranty

General Information

Westover Scientific, Inc. (WSI) warrants this equipment against defects in material and workmanship for a period of one year from the date of original shipment. WSI also warrants that this equipment will meet applicablespecifications under normal use. During the warranty period, WSI will, at its sole discretion, repair, replace, or issue credit for any defective product free of charge should the equipment need to be repaired.

IMPORTANT

The warranty will become null and void if

- **the equipment has been tampered with, repaired, or worked upon by unauthorized individuals or non-WSI personnel.**
- **the warranty label has been removed.**
- **product enclosure screws, other than those specified in this manual, have been removed.**
- **the product enclosure has been opened, other than as explained in this manual.**
- **the equipment serial number has been altered, erased, or removed.**
- **the equipment has been misused, neglected, or damaged by accident.**

THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES EXPRESSED, IMPLIED, OR STATUTORY, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. IN NO EVENT SHALL EXFO BE LIABLE FOR SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES.

Liability

WSI shall not be liable for damages resulting from the use of the purchased product, nor shall be responsible for any failure in the performance of other items to which the purchased product is connected or the operation of any system of which the purchased product may be a part. WSI shall not be liable for damages resulting from improper usage or unauthorized modification of the product, its accompanying accessories and software.

Warranty

General Information

Exclusions

WSI reserves the right to make changes in the design or construction of any of its products at any time without incurring obligation to make any changes whatsoever on units purchased. Accessories, including but not limited to fuses, pilot lamps, and batteries used with WSI products are not covered by this warranty.

Certification

WSI certifies that this equipment met its published specifications at the time of shipment from the factory.

Service and Repairs

WSI commits to providing product service and repair for five years after the date of purchase.

To send any equipment for service or repair:

1. Call WSI Technical Support. Support personnel will determine if the equipment requires service.

2. If the equipment must be returned to WSI, support personnel will issue a Return Merchandise Authorization (RMA) number and an address for return.

3. If the unit has an internal storage device, do a backup of your data before sending the unit for repairs.

4. Pack the equipment in its original shipping material, if possible. Be sure to include a statement or report fully detailing the defect and the conditions under which it was observed.

5. Return the equipment, prepaid, to the address given by the support personnel. Be sure to write the RMA number on the outside of the shiping container. *WSI will refuse and return any package that does not bear an RMA number*.

After repair, the equipment will be returned with a repair report. If the equipment is not under warranty, the customer will be invoiced for the cost appearing on this report. Return-to-customer shipping costs will be paid by WSI for equipment under warranty. Shipping insurance is at the customer's expense.

Technical Specifications

General Information

IMPORTANT

The following technical specifications can change without notice. The information presented in this section is provided as a reference only. To obtain this product's most recent technical specifications, visit the WSI website at www.westoverscientific.com or contact WSI directly.

Video Inspection Probe

Dimensions: (1.8"/45.7mm W) x (1.7"/43.2mm H) x (5.5"/140mm L*)
Weight: 0.4 lb. / 0.18 kg.
Camera Type: 0.33in. CCD
Video Output: NTSC or PAL
Light Source: Blue LED, 100,000+ hour life
Lighting Technique: Coaxial
Power Source: From HD1a or USB Port of a PC
Attenuation Filter: 2mm thick Schott KG1

HD1A Hand-Held Display

Dimensions: (4"/10cm W) x (2.1"/5.3cm D) x (8.7"/22cm L)
Weight: 0.8 lb. / 0.4 kg.
Video Display: 3.5"/9cm TFT Active Matrix 320 x 240 pixels
Video Input: NTSC, with dedicated connector for Probe or conversion cable
Power Source: Li-ion Battery Sony® Type NP-550 or AC Adapter/Charger (110 and 240VAC, EURO or UK plugs included)
Battery Life: 2 hours continuous use
Charging Time: 2 hours

Video Output Module (VO1 - VO2)

Dimensions: (2.4"/6.1cm W) x (1"/2.5cm H) x (3.6"/8.1cm L)
Weight: 0.3 lb. / 0.14 kg
Video Input: NTSC or PAL, with dedicated connector for Probe
Power : 9V, 300 mA (110 and 240VAC, EURO or UK plug included)
Input: VO1 (1 Probe w/dedicated connector & 1 BNC for other Westover Bench-Top Video Inspection Microscopes); VO2 (2 Probes w/dedicated connector)
Output: BNC

Digital Capture Module

Dimensions: (6"/15cm W) x (2.3"/5.8cm H) x (0.7"/1.8cm D) with 3' USB cable
Weight: 0.17 lb. / 0.08kg.
Video Input: NTSC or PAL, w/ dedicated connector for Probe or conversion cable
Power: 5V, 500mA from USB port of PC
Output: USB

Parts and Accessories

Analog Probes

Cat. No.	Description
FBP-P1	Analog Probe: Low Mag. only, No tips, No video display
FBP-P2	Analog Probe: Low Mag. only, **PAL video format**, No tips, No video display
FBP-P5	Analog Probe: Low & Hi Mag., No tips, No video display
FBP-PX1	Analog Probe: Low Mag. only, NO barrel assembly - for use with long reach tips
FBP-PX2	Analog Probe: Low Mag. only, **PAL video format**, NO barrel assembly - for use with long reach tips

Hand Held Displays

Cat. No.	Description
FBP-HD1	Hand Held Video Display, 3.5" LCD TFT; Li-ion rechargeable battery, 110v
FBP-HD1-EU	Hand Held Video Display, 3.5" LCD TFT; Li-ion rechargeable battery, 220v w/Euro plug
FBP-HD1-UK	Hand Held Video Display, 3.5" LCD TFT; Li-ion rechargeable battery, 220v w/UK plug

Analog Probes Kits

Cat. No.	Description
FBP-S1	FBP System, Deluxe: Analog Probe (FBP-P1), Hand Held Display (FBP-HD1) FBPT Tips: ST, SC, FC and Universal 2.5mm patch cord tip, includes Hard Sided Carrying case.
FBP-S1-EU	FBP System, Deluxe EU: Analog Probe (FBP-P1), Hand Held Display (FBP-HD1-EU) FBPT Tips: ST, SC, FC and Universal 2.5mm patch cord tip, includes Hard Sided Carrying case
FBP-S1-UK	FBP System, Deluxe UK: Analog Probe (FBP-P1), Hand Held Display (FBP-HD1-UK) FBPT Tips: ST, SC, FC and Universal 2.5mm patch cord tip, includes Hard Sided Carrying case
FBP-S15	FBP System, Deluxe: Analog Probe (FBP-P5), Hand Held Display (FBP-HD1) FBPT Tips: ST, SC, FC and Universal 2.5mm patch cord tip, includes Hard Sided Carrying case
FBP-S15-EU	FBP System, Deluxe EU: Analog Probe (FBP-P5), Hand Held Display (FBP-HD1-EU) FBPT Tips: ST, SC, FC and Universal 2.5mm patch cord tip, includes Hard Sided Carrying case
FBP-S15-UK	FBP System, Deluxe UK: Analog Probe (FBP-P5), Hand Held Display (FBP-HD1-UK) FBPT Tips: ST, SC, FC and Universal 2.5mm patch cord tip, includes Hard Sided Carrying case

Analog Probes Kits

Cat. No.	Description
FBP-S2	FBP System without Tips: Analog Probe (FBP-P1), Hand Held Display (FBP-HD1), hard sided carrying case; NO Tips
FBP-S2-EU	FBP System EU without Tips: Analog Probe (FBP-P1), Hand Held Display (FBP-HD1-EU), hard sided carrying case; NO Tips
FBP-S2-UK	FBP System UK without Tips: Analog Probe (FBP-P1), Hand Held Display (FBP-HD1-UK), hard sided carrying case; NO Tips
FBP-S25	FBP System without Tips: Analog Probe (FBP-P5), Hand Held Display (FBP-HD1), hard sided carrying case; NO Tips
FBP-S25-EU	FBP System EU without Tips: Analog Probe (FBP-P5), Hand Held Display (FBP-HD1-EU), hard sided carrying case; NO Tips
FBP-S25-UK	FBP System UK without Tips: Analog Probe (FBP-P5), Hand Held Display (FBP-HD1-UK), hard sided carrying case; NO Tips
FBP-S3	FBP Benchtop System: Analog Probe (FBP-P1), Video Output Module (FBP-VO1), FBPT Tips: ST, SC, FC and Universal 2.5mm patch cord tip. **Requires monitor**
FBP-S3-EU	FBP Benchtop System EU: **PAL Video format** Analog Probe (FBP-P2), Video Output Module 220v Euro power supply with (FBP-VO1-EU), FBPT Tips: ST, SC, FC and Universal 2.5mm patch cord tip. **Requires a **PAL** monitor**
FBP-S3-UK	FBP Benchtop System UK: **PAL Video format** Analog Probe (FBP-P2), Video Output Module 220v UK power supply with (FBP-VO1-UK), FBPT Tips: ST, SC, FC and Universal 2.5mm patch cord tip. **Requires a **PAL** monitor**
FBP-S35	FBP Benchtop System: Analog Probe (FBP-P5), Video Output Module (FBP-VO1), FBPT Tips: ST, SC, FC and Universal 2.5mm patch cord tip. **Requires monitor**
FBP-S7	FBP Benchtop System: Analog Probe (FBP-P7), Video Output Module (FBP-VO2), FBPT Tips: ST, SC, FC and Universal 2.5mm patch cord tip. **Requires monitor**

Analog Probe Parts & Accessories

Cat. No.	Description
FBP-VO1	Video Output Module: routes signal from probe to standard NTSC monitor. Input for one probe and one FV system with A/B switch, includes BNC cable, 110v US power supply
FBP-VO1-EU	Video Output Module: routes signal from probe to standard NTSC monitor. Input for one probe and one FV system with A/B switch, includes BNC cable, 220v Euro power supply
FBP-VO1-UK	Video Output Module: routes signal from probe to standard NTSC monitor. Input for one probe and one FV system with A/B switch, includes BNC cable, 220v UK power supply
FBP-VO2	Video Output Module: routes signal from probe to standard NTSC monitor. Two inputs for two probes and A/B switch, includes BNC cable, 110v US power supply
FBP-VO2-EU	Video Output Module: routes signal from probe to standard NTSC monitor. Two inputs for two probes and A/B switch, includes BNC cable, 220v Euro power supply
FBP-VO2-UK	Video Output Module: routes signal from probe to standard NTSC monitor. Two inputs for two probes and A/B switch, includes BNC cable, 220v UK power supply
FBP-VO3	Video Output Module, extended
FBPP-BAP1	Barrel Assembly for 200x and 400x probes
FBPP-BAP7	Barrel Assembly for P7 probe
FBPP-CFP1	Front Pack for FBP system
FBPP-CHOLI	FBP Holster, attaches to your belt with two adjustable hooks
FBPP-EC1	Cable, Extension, 6' length, for FBP Series
FBPP-HA1	Hanging Accessory For FBP-HD1, Includes rubber-coated magnet.
FBPP-HDB2	Lithium-ion battery, 7.2V 10.8Wh for HD1. NP-550 type.
FBPP-BCS1	Charger for 7.2V 10.8Wh Li-ion battery for HD1. Includes adapter tray, AC wall adapter, universal car cord power adapter. Battery not included.
FBPP-HSC1	Hard-sided field case for FBP-Series w/die-cut foam inserts
FBPP-HSC2	Hard-sided case for FBP Series NO DIE CUT FOAM
FBPP-HSC3	Case, Hard-sided, Rugged For FBP-Series w/die-cut foam inserts
FBPP-PS1-EU	Power supply for FBP-HD1-EU 220V AC input, 15V DC output with EU plug
FBPP-PS1-UK	Power supply for FBP-HD1-UK 220v AC input, 15v DC output with UK plug
FBPP-PS2-EU	Power supply for FBP-VOx-EU (for either VO model)
FBPP-PS2-UK	Power supply for FBP-VOx-UK (for either VO model)

Quick Capture Probes

Cat. No.	Description
FBP-P100	P100 Probe: 200x Quick Capture Analog probe, Digital Capture Module, software, NO tips
FBP-P105	P100 Probe:200x Quick Capture Analog probe, Digital Capture Module, No software, NO tips
FBP-P200	P200 Probe: 200x Quick Capture Analog probe, **PAL format,** Digital Capture Module, software, NO tips
FBP-P205	P200 Probe: 200x Quick Capture Analog probe, **PAL format**, Digital Capture Module, No software, NO tips
FBP-P500	P100 Probe: 400x Quick Capture Analog probe, Digital Capture Module, software, NO tips
FBP-P505	P100 Probe: 400x Quick Capture Analog probe, No Digital Capture Module, No software, NO tips
FBP-P600	P200 Probe: 400x Quick Capture Analog probe, **PAL format,** Digital Capture Module, software, NO tips
FBP-P605	P200 Probe: 400x Quick Capture Analog probe, **PAL format**, Digital Capture Module, No software, NO tips
FBP-PX100	PX100 Probe: 200x Quick Capture Analog probe, No Digital Capture Module, No software, NO tips, No barrel assembly
FBP-PX200	PX200 Probe: 200x Quick Capture Analog probe **PAL format**, No Digital Capture Module, No software, NO tips, No barrel assembly
FBP-PX500	PX500 Probe: 400x Quick Capture Analog probe, No Digital Capture Module, No software, NO tips, No barrel assembly
FBP-PX600	PX600 Probe: 400x Quick Capture Analog probe **PAL format**, No Digital Capture Module, No software, NO tips, No barrel assembly

Quick Capture Probe Parts & Accessories

Cat. No.	Description
FBPP-DBNC1	Digital BNC cable-Interfaces FV systems to 6 Pin USB Modules
FBPP-DPAC1	Digital probe adapter cable- Interfaces 6-pin digital probe to 4-pin HD1, VO1, or VO2
FBPP-DPAC2	Digital Conversion Cable - Interfaces 6-pin USB module to 4-pin Standard Probe

Quick Capture Probe Parts & Accessories (con't)

Cat. No.	Description
FBPP-USB1	Quick Capture Analog Probe USB module: Includes USB module with 6 pin connector and software
FBPP-USB3	USB Upgrade Kit for Analog Probe (4 pin) to USB module with software
FBPP-VCK1	Quick Capture Analog Probe to VO1 Kit: Outputs probe signal to Monitor for viewing only. No image capture capabilities. Includes: FBPP-DPAC1 interface cable and VO1 module w/BNC video cable
FBPP-VCK2	Quick Capture Analog Probe to VO2 Kit: Outputs 2 probe signals to Monitor for viewing only. No image capture capabilities. Includes: 2 FBPP-DPAC1 interface cables and VO2 module w/2 BNC video cables
FVPP-USB2	USB Upgrade Kit: Converts FV System to Digital. Includes USB module, FBPP-DBNC1 interface cable, software.

Quick Capture Probe Kits

Cat. No.	Description
FBP-S1150	Deluxe Kit: 200x Quick Capture Analog Probe, Digital Capture Module, FBPT Tips: SC, FC, ST and Universal 2.5mm patch cord tip, Hand Held Display (FBP-HD1) w/converter cable and ruggedized Case (from Pelican).
FBP-S1250	Deluxe Kit: 200x Quick Capture Analog Probe **PAL format**, Digital Capture Module, FBPT Tips: SC, FC, ST and Universal 2.5mm patch cord tip, Hand Held Display (FBP-HD1) w/converter cable, EU power supply and ruggedized Case (from Pelican).
FBP-S1550	Deluxe Kit: 400x Quick Capture Analog Probe, Digital Capture Module, FBPT Tips: SC, FC, ST and Universal 2.5mm patch cord tip, Hand Held Display (FBP-HD1) w/converter cable and ruggedized Case (from Pelican).
FBP-S1650	Deluxe Kit: 400x Quick Capture Analog Probe **PAL format**, Digital Capture Module, FBPT Tips: SC, FC, ST and Universal 2.5mm patch cord tip, Hand Held Display (FBP-HD1) w/converter cable, EU power supply and ruggedized Case (from Pelican).
FBP-S3100	Basic Kit: 200x Quick Capture Analog Probe, Digital Capture Module, FBPT Tips: SC, FC, ST and Universal 2.5mm patch cord tip, software
FBP-S3200	Basic Kit: 200x Quick Capture Analog Probe **PAL format**, Digital Capture Module, FBPT Tips: SC, FC, ST and Universal 2.5mm patch cord tip, software
FBP-S3500	Basic Kit: 400x Quick Capture Analog Probe, Digital Capture Module, FBPT Tips: SC, FC, ST and Universal 2.5mm patch cord tip, software
FBP-S3600	Basic Kit: 400x Quick Capture Analog Probe **PAL format**, Digital Capture Module, FBPT Tips: SC, FC, ST and Universal 2.5mm patch cord tip, software

Probe Tips

The following is a list of Probe Tips currently avaliable as of April 2003. Other tips are in development. In addition, custom tips can be developed. Please call for info.

Standard Bulkhead, Patch Cord, & Universal Tips (PC & APC)

Cat. No.	Description
FBPT-BIC	Biconic Tip
FBPT-D4	Bulkhead Tip, D4
FBPT-E2000	Bulkhead Tip, E2000 APC or PC Polish
FBPT-FC	Bulkhead Tip, FC
FBPT-FC-APC	Bulkhead Tip, FC-APC
FBPT-FC-P	Bulkhead Tip, FC w/center align screw
FBPT-LC	Bulkhead Tip, LC
FBPT-LC-APC	Bulkhead Tip, LC-APC
FBPT-LC-DC	Daughtercard Tip, LC
FBPT-MTRJ-1	Bulkhead Tip, MTRJ simple type
FBPT-MU	Bulkhead Tip, MU
FBPT-SC	Bulkhead Tip, SC
FBPT-SC-APC	Bulkhead Tip, SC-APC
FBPT-SCA-DC	Daughtercard Tip, SC-APC
FBPT-ST	Bulkhead Tip, ST
FBPT-U12M	Patch Cord Tip, Universal 1.25mm
FBPT-U25M	Patch Cord Tip, Universal 2.5mm
FBPT-U25MA	Patch Cord Tip, Universal 2.5mm Angled at 8 degrees
FBPT-U25PL	Patch Cord Tip, Universal 2.5mm w/ Plastic inner ring
FBPT-UFMA	Universal Flare Adapter Interfaces with all FMA Series

Long-Reach Tips

Cat. No.	Description
FBPT-LC-L	Bulkhead Tip, LC; Long Reach
FBPT-MU-L	Bulkhead Tip, MU; Long Reach
FBPT-ST-L	Bulkhead Tip, ST; Long Reach

Probe Tips

Angled Tips

Cat. No.	Description
FBPT-LC-A6	Angled Tip, 60 degree, LC
FBPT-LC-A6S	Angled, Square Tip, 60 degree, LC
FBPT-MTP-A6	Angled Tip, 60 degree, MTP w/X-axis pan control knob
FBPT-MU-A6	Angled Tip, 60 degree, MU
FBPT-SC-A6	Angled tip, 60 degree, SC
FBPT-SCFC-A6	Angled Tip, 60 degrees, combined SC-FC

Mil-Aero Tips

Cat. No.	Description
FBPT-MC3	MC3 Tip
FBPT-MC3P	MC3 Socket Guide
FBPT-MIL-1P	Mil Spec Tip, Pin side For MIL-T-29504/14/15 ferrules
FBPT-MIL-1S	Mil Spec Tip, Socket side For MIL-T-29504/14/15 ferrules
FBPT-MIL-2CPA	Test Probe adapter for M38999
FBPT-MIL-2P	Mil Spec Tip, Pin side For MIL-T-29504/4/5 ferrules
FBPT-MIL-2S	Mil Spec Tip, Socket side For MIL-T-29504/4/5 ferrules

Ribbon Fiber Tips

Cat. No.	Description
FBPT-HBMTA-DC	Daughtercard Tip, HBMT-APC w/X-axis pan control knob
FBPT-HBMTA-MB	Motherboard Tip, HBMT-APC w/X-axis pan control knob
FBPT-MPX	Bulkhead Tip, MPX w/X-axis pan control knob
FBPT-MPX-MB	Motherboard Tip, MPX w/X-axis pan control knob
FBPT-MPXA	Bulkhead Tip, MPX-APC w/X-axis pan control knob
FBPT-MPXA-MB	Motherboard Tip, MPX-APC w/X-axis pan control knob
FBPT-MTP	Bulkhead Tip, MTP w/X-axis pan control knob
FBPT-MTP-DC	Daughtercard Tip, MTP w/X-axis pan control knob
FBPT-MTP-MB	Motherboard Tip, MTP w/X-axis pan control knob
FBPT-MTPA	Bulkhead Tip, MTP-APC w/X-axis pan control knob
FBPT-MTPA-DC	Daughtercard Tip, MTP-APC w/X-axis pan control knob
FBPT-MTPA-MB	Motherboard Tip, MTP-APC w/X-axis pan control knob
FBPT-OGIA	Bulkhead Tip, OGI-APC w/X-axis pan control knob
FBPT-OGIA-DC	Daughtercard Tip, OGI-APC w/X-axis pan control knob
FBPT-OGIA-EX	Bulkhead Tip, OGI-APC Extended Reach w/X-axis pan control knob
FBPT-OGIA-MB	Motherboard Tip, OGI-APC w/X-axis pan control knob
FBPT-OGIA-MB4	Motherboard Tip, OGI-APC; QUAD w/X-axis pan control knob

Adapters for Male Connectors (FMA Series)

The following is a list of Adapters currently avaliable as of April 2003. These adapters can be used with our Probes. The FBPT-UFMA Universal Flare Tip must be used to mate these adapters (see page xx). Custom adapters can be developed. Please call for info.

Cat. No.	Description
FMA-BF1	Adapter, Bare Fiber
FMA-BIC	Adapter, Biconic
FMA-D4	Adapter, D4
FMA-FC-APC	Adapter, FC-APC
FMA-FCPC	Adapter, FC
FMA-LC	Adapter, LC
FMA-LC-APC	Adapter, LC-APC
FMA-MMT-2	Adapter, Mini-MT ferrule w/x-y axis pan & scroll adjust
FMA-MPX	Adapter, MPX w/x-y axis pan & scroll adjust
FMA-MPXA	Adapter, MPX-APC w/x-y axis pan & scroll adjust
FMA-MT	Adapter, MT w/x-y axis pan & scroll adjust
FMA-MTA	Adapter, MT-APC w/x-y axis pan & scroll adjust
FMA-MTP	Adapter, MTP w/x-y axis pan & scroll adjust
FMA-MTPA	Adapter, MTP-APC w/x-y axis pan & scroll adjust
FMA-MTRJ-1	Adapter, MTRJ; Simple type, remove and rotate
FMA-MTRJ-2	Adapter, MTRJ w/x-y axis pan & scroll adjust
FMA-MU	Adapter, MU
FMA-OGIA	Adapter, OGI-APC w/x-y axis pan & scroll adjust
FMA-SC	Adapter, SC
FMA-SC-APC	Adapter, SC-APC
FMA-SMA	Adapter, SMA
FMA-SMC	Adapter, FMA-SMC w/x-y axis pan & scroll adjust
FMA-SMCA	Adapter, SMC-APC w/x-y axis pan & scroll adjust
FMA-ST	Adapter, ST
FMA-U12	Adapter, Universal 1.25mm
FMA-U12-P	Adapter, Universal 1.25mm Pro version w/ alignment mechanism
FMA-U25	Adapter, Universal 2.5mm
FMA-U25-P	Adapter, Universal 2.5mm Pro version w/ alignment mechanism
FMA-U25PL	Adapter, Universal 2.5mm w/ plastic sleeve
FMA-U381	Adapter, Universal 3.81 mm
FMA-UAPC	Adapter, Universal 2.5mm APC
FMA-UAPC-P	Adapter, Universal 2.5mm APC Pro version w/alignment mechanism
FMA-E2	Adapter, E2000
FMA-MIL1	Adapter, MIL Spec For MIL-T-29504/14/15 ferrules
FMA-MIL2	Adapter, MIL Spec For MIL-T-29504/4/5 ferrules
FMA-RFC1	Adapter, Bare Fiber Ribbon